

to slender capillary tips. Thoracic neuropodial uncinigerous pinnules begin on segment 6 (setigerous segment 4); pinnules without cirri or may be short cirri on upper parts of pinnules on few of more posterior thoracic segments (Fig. 1, H-I). Thoracic uncini pectiniform, with four teeth in a single row above the rounded basal part (Fig. 1, L). Abdominal region with achaetous remnants of notopodia on about first six abdominal segments (Fig. 1, I), with uncinigerous pinnules on 22-25 segments (may have one or two achaetous posterior rings; Fig. 1, G), with neuropodial cirri on upper parts of pinnules (Fig. 1, I, K); abdominal uncini pectiniform, with five teeth in single row above rounded basal part (Fig. 1, M). Pygidium short, rounded, without papillae or cirri, may be somewhat lobulated (Fig. 1, G). Anus terminal. Posterior end, including pygidium and last few uncinigerous segments, may be turned inside. Nephridial papillae 3 pairs, posterior to notopodia on segments 4-6 (setigerous segments 2-4; Fig. 1, F).

Color: in life, greenish with whitish spots; in alcohol, colorless or slightly brownish. Tube several times the length of the animal, rather straggly, composed of debris and few light-colored sand grains or may be composed mostly of light-colored sand grains and a small amount of debris.

MALACOLOGY.—*Review of the living species of Echinochama.* DAVID NICOL, U. S. National Museum.

A few months before the publication of my paper on *Echinochama* (1952), I received 10 specimens of the genus from Dr. H. S. Lopes, of the Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, and Dr. C. N. Gofferjé, of the Museu Paranaense, Curitiba, Brazil. The material was collected on the coast of the State of Santa Catarina, Brazil. Besides the fact that these specimens extend the recorded range of the genus considerably, they are also distinctive enough morphologically to be considered a heretofore undescribed species. This paper contains a description of the new species and a review of the living species of the genus as well as its geographic distribution.

Remarks.—*Hypaniola grayi* differs from *H. kowalewskii* (Grimm, 1877; see Annenkova, 1927, 1929; known from the Caspian Sea) as follows: The prostomium is shaped differently; there are four pairs of subequal branchiae (*H. kowalewskii* has three or four pairs of branchiae; when the fourth pair is present, it is rudimentary); the abdominal pinnules have cirri (without in the Caspian species); abdominal uncini with five teeth in a vertical row (in *H. kowalewskii*, uncini with 15 or 16 teeth in three vertical rows).

Locality.—James Pond (salt pond), Martha's Vineyard, Mass., found by digging in sandy mud under water, collected by M. B. Gray, August 8, 1950, August 25, 1951, and August 21, 1952. It was found along with other polychaetes, as *Haploscoloplos fragilis* (Verrill), *Heteromastus filiformis* (Claparède), and *Polydora ligni* Webster.

REFERENCES

- ANNENKOVA, N. Über die pontokaspischen Polychaeten. I. Die Gattungen Hypania Ostroumov und Hypaniola, n. gen. Ann. Mus. Zool. Acad. Sci. URSS. **28**: 48-62, 1 pl. 1927.
 ———. Über die pontokaspischen Polychaeten. II. Die Gattungen Hypaniola, Parhypania, Fabricia und Manayunkia. Ann. Mus. Zool. Acad. Sci. URSS. **30**: 13-20, 2 pls. 1929.

Genus **Echinochama** Fischer, 1887

Type species.—(Monotypy) *Chama arcinella* Linné, 1767. Recent, Caribbean Sea.

Echinochama brasiliiana Nicol, n. sp.

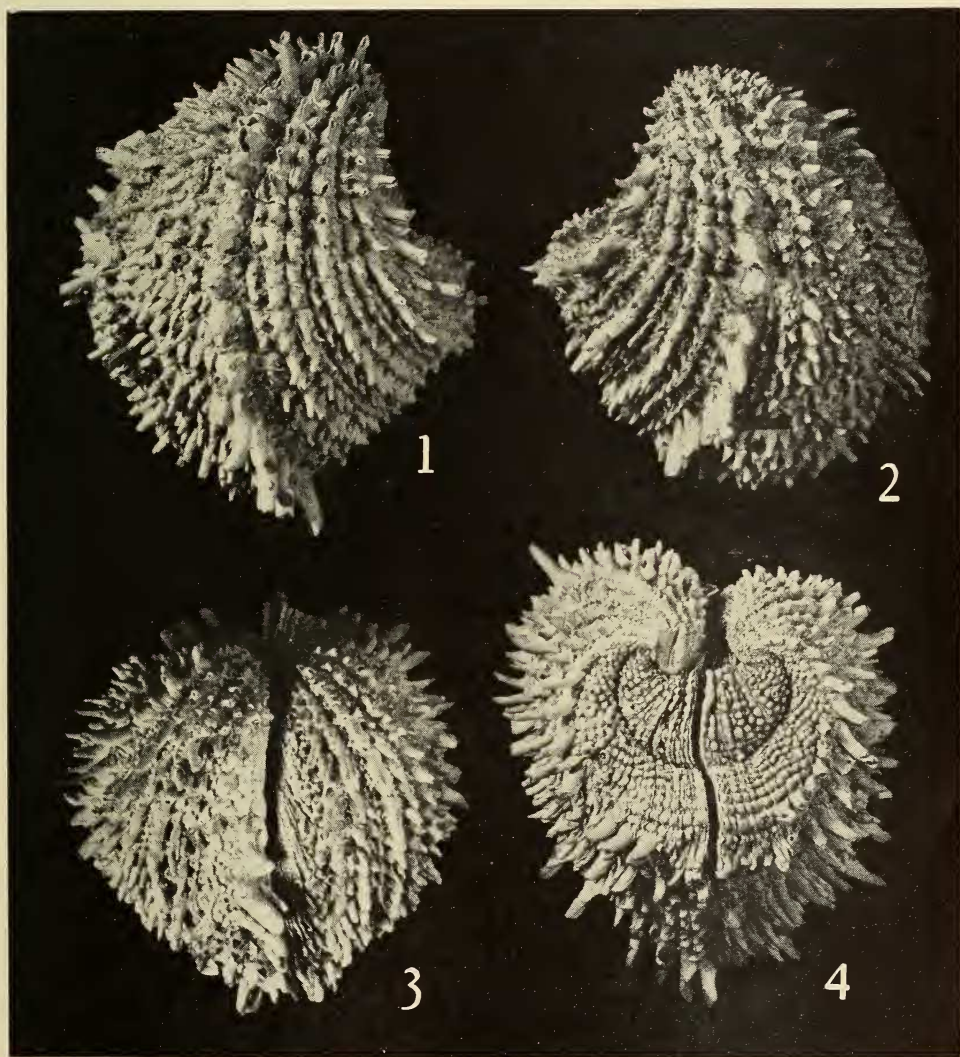
Figs. 1-4

Description.—Shell thick, large; generally higher than long; ratio of convexity to height 0.80; number of spine rows from 18 to 29, averaging 24 for 10 specimens; spine rows closely spaced and most spines small and closely spaced; largest specimen 61.6 mm high, 54.3 mm long, convexity 52.6 mm; smallest specimen 40.5 mm high, 39.7 mm long, convexity 32.0 mm; average height 51 mm; average length 46 mm, average convexity 41 mm.

Comparisons.—*Echinochama brasiliana* is most closely related to *E. arcinella arcinella* but differs from the latter in the following ways: It is larger and has a thicker shell; it is more obese (ratio of convexity to height 0.80 in *E. brasiliana* as compared with 0.75 in *E. arcinella arcinella*); the spine rows are more numerous, and there are more and smaller spines on each row in *E. brasiliana*; the height and length are about equal in *E. arcinella arcinella*, whereas *E. brasiliana* is higher than long. *E. brasiliana* differs from *E. arcinella californica* in the same ways. *E. brasiliana* differs from *E. cornuta* in having a larger

number of rows of spines (average 24 as compared to average 10 in *E. cornuta*); *E. brasiliana* also has more numerous small spines.

Types.—The holotype is in the U. S. National Museum, no. 605546; one lot containing two paratypes, no. 603965, and one lot containing one paratype, no. 605771, are also in the U. S. National Museum. Five paratypes have been sent to the Museu Paranaense, Rua Buenos Aires, 200-Curitiba, Paraná, Brazil, and one paratype has been sent to the Instituto Oswaldo Cruz, Rio de Janeiro, Brazil.



FIGS. 1-4.—*Echinochama brasiliana* Nicol, n. sp. Holotype, U. S. N. M. no. 605546; Recent, Ilha do Francês, Santa Catarina, Brazil; $\times 1$; 1, Exterior view, right valve; 2, exterior view, left valve; 3, posterior view, both valves; 4, anterior view showing lunule, both valves.

KEY TO THE RECENT SPECIES OF ECHINOCHEMA

- 1
- Average number of spine rows 10. *E. cornuta*
Average number of spine rows 20 or more. 2
- 2(1)
- Height and length equal, umbones low, spines generally large. *E. arcinella*
Higher than long, umbones high, many rows of small spines. *E. brasiliana*

Geographic distribution.—The new species occurs at the extreme southern end of the range of *Echinochama* in the western Atlantic, and it has been found only off the Ilha do Francês, which is 1,200 meters north of Ilha de Santa Catarina, Santa Catarina, Brazil. According to Dr. Gofferjé (1950, p. 262, and also personal communication), *E. arcinella arcinella* is found on the coast of Paraná, Brazil. Additional collecting may extend the range of the genus still farther south. The accompanying map (Fig. 5) shows the distribution of the living species of *Echinochama*, and a

more detailed account of the distribution of the genus is given in my paper (1952, pp. 811–813).

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REFERENCES

GOFFERJÉ, C. N. *Contribuição à zoogeografia da malacofauna do litoral do Estado do Paraná*. Arq. Mus. Paranaense 8 (7): 221–282, pls. 31–35. 1950.

NICOL, DAVID. *Revision of the pelecypod genus Echinochama*. Journ. Pal. 26 (5): 803–817, pls. 118–119, 15 figs. 1952.



FIG. 5.—Map showing distribution of living species of *Echinochama*. Hexagons—*Echinochama cornuta* (Conrad). downward pointing triangles—*Echinochama arcinella arcinella* (Linné). Upward pointing triangles—*Echinochama arcinella californica* Dall. Squares—*Echinochama brasiliana* Nicol.